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FOREST HYDROLOGY to Determine the Effects of Vegetation Manipulation
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Part II Procedures to Determine Hydrologic Effects of Vegetation Manipulation
Section IIC – The Procedure Utilizing the Water Balance Approach (Clearwater N.F.)

7.00 Suggested Timber Cutting Guidelines for use on the Clearwater national Forest

7.10 If the proposed cutting develops an increase in the average annual yield of about 10 percent in a third or fourth order stream, there has been some evidence that damage to the stream channel can begin to occur. Therefore, for third and fourth order streams the following broad guidelines shall apply:

7.11 Proposed timber cutting should not increase the average annual flow for a 3rd or 4th order stream more than 10%.

7.12 The peak flow volume of highest monthly yield of a 3rd order drainage should not be increased more than 20%. For a 4th order drainage this increase shall not be more than 15%. This is for channels in GOOD condition. Reduce by 5% increments for channels in FAIR and POOR condition.

7.13 The "maximum channel impact period" for a 3rdorder drainage should not be increased more than 18% and for a 4th order drainage not more than 20%.

7.14 For first order drainages the graph in Figure 6 gives the maximum allowable Probably Equivalent Clearcut Area (PECA), by average elevation of the drainage, for the Clearwater National Forest. This family of curves depicts 15, 10, and 5 percent allowable increases in average annual flow for 1st order stream channels on GOOD, FAIR, and POOR condition.

8.00 Practices to AVOID in order to help spread the probable yield increases and reduce the monthly peaks.

8.11 DO NOT concentrate cutting blocks in the same elevation zone or same aspect, or along the main drainageway.

8.12 DO NOT cut within leave strips of timber until the adjacent clearcut is reestablished with timber that is 10-15 feet in height,

and has a crown closure of at least 50-60 percent, unless PECA for total area is within limits.

8.13 DO NOT clearcut closer than 3 chains to a 3rd or 4th order stream below 5,000 feet. Above 5,000 feet, this strip can be reduced to 1 ½ chains.

8.14 Timber on filter strips may be partially cut to remove high risk trees, but DO NOT cut more than 35% of the original stand below 5,000 feet or 45% above 5,000 feet, except in cases of extreme mortality rates. In these cases remove dead and dying to keep snags out of the streams.

8.15 DO NOT design clearcut blocks greater than 40 acres in 1st and 2nd order drainages with:

8.151 South to west exposures
8.152 Slopes gradients greater than 35 percent
8.153 Elevations below 4,000 feet.

Estimating ECA Allowed in 1st Order Drainages, By Elevation for the Clearwater National Forest (WLR, Jr. 1971)

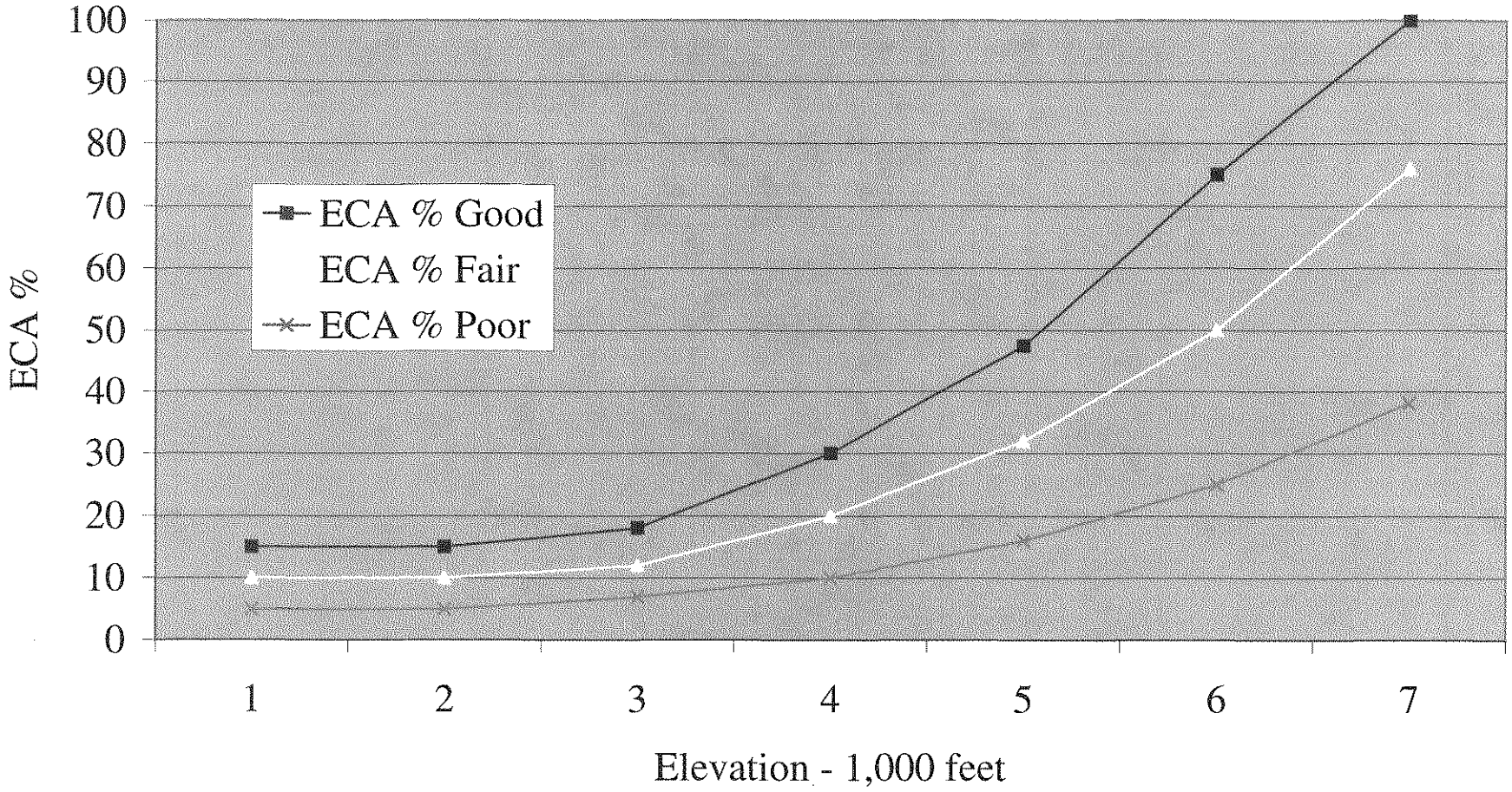
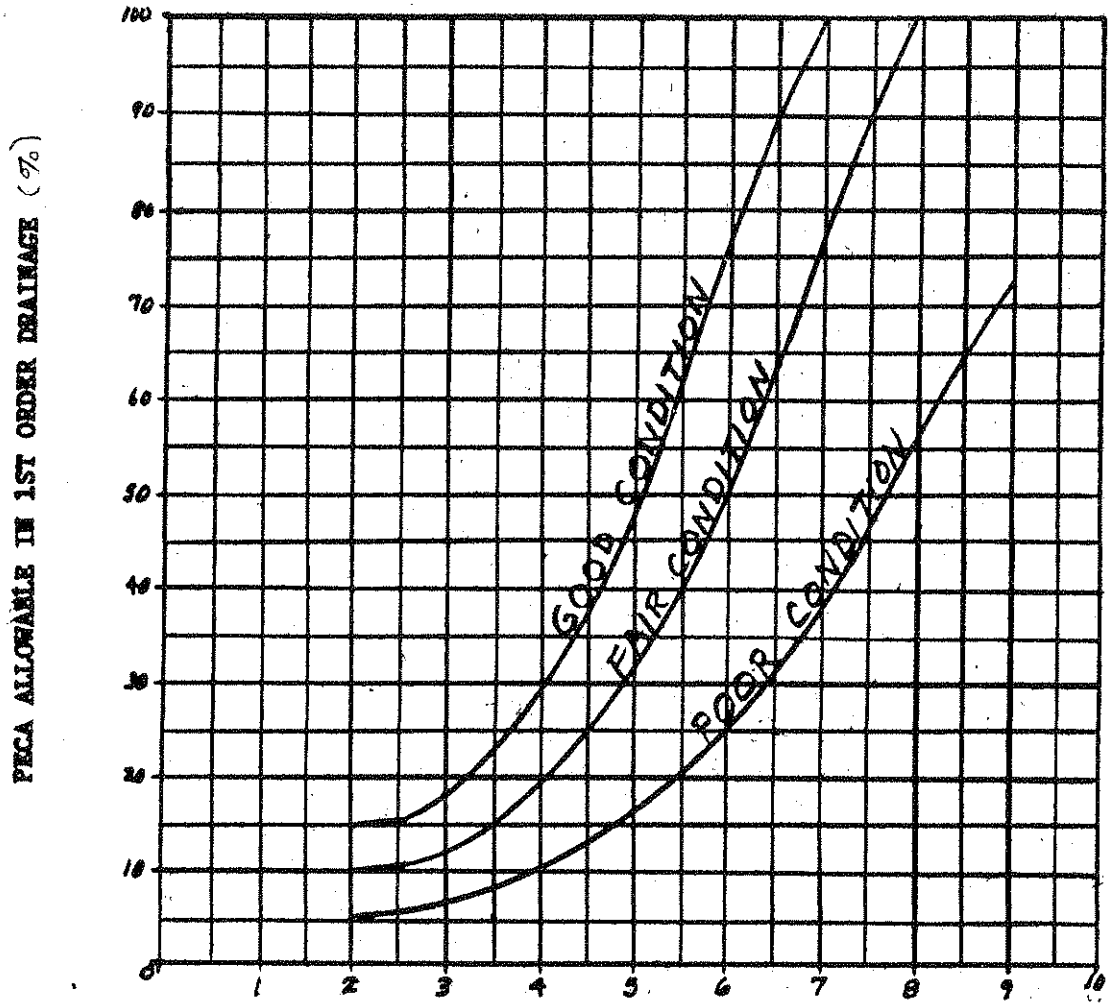


Figure 6: Estimating the Probable Equivalent Clearcut Area (PECA) allowable in a first order drainage, by elevation for the Clearwater National Forest



WLR,Jr.
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